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SETTING UP AN APPRENTICESHIP PROGRAM, A STEP-BY-STEP GUIDE IN
TRAINING APPRENTICES FOR SKILLED OCCUPATIONS.

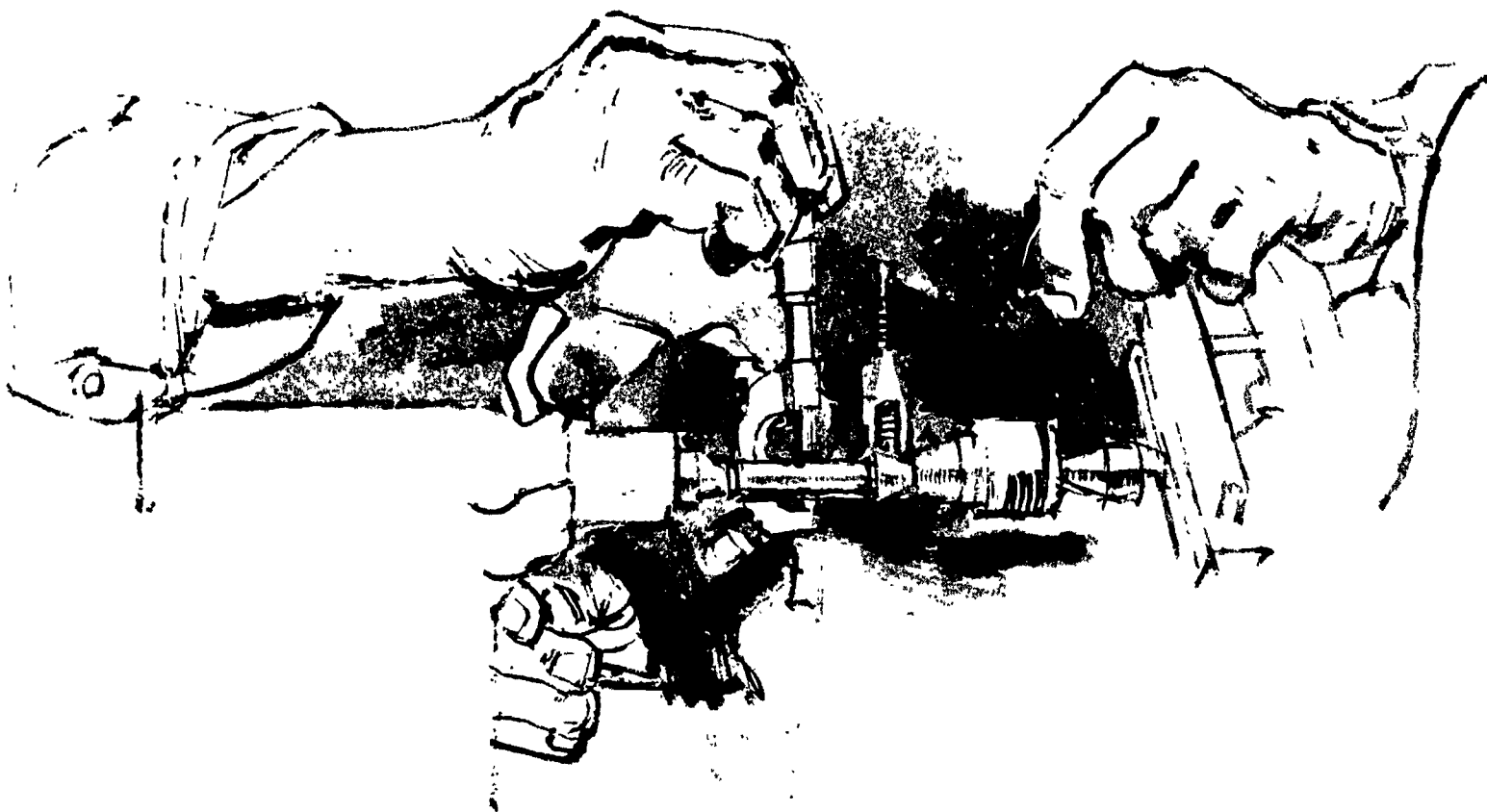
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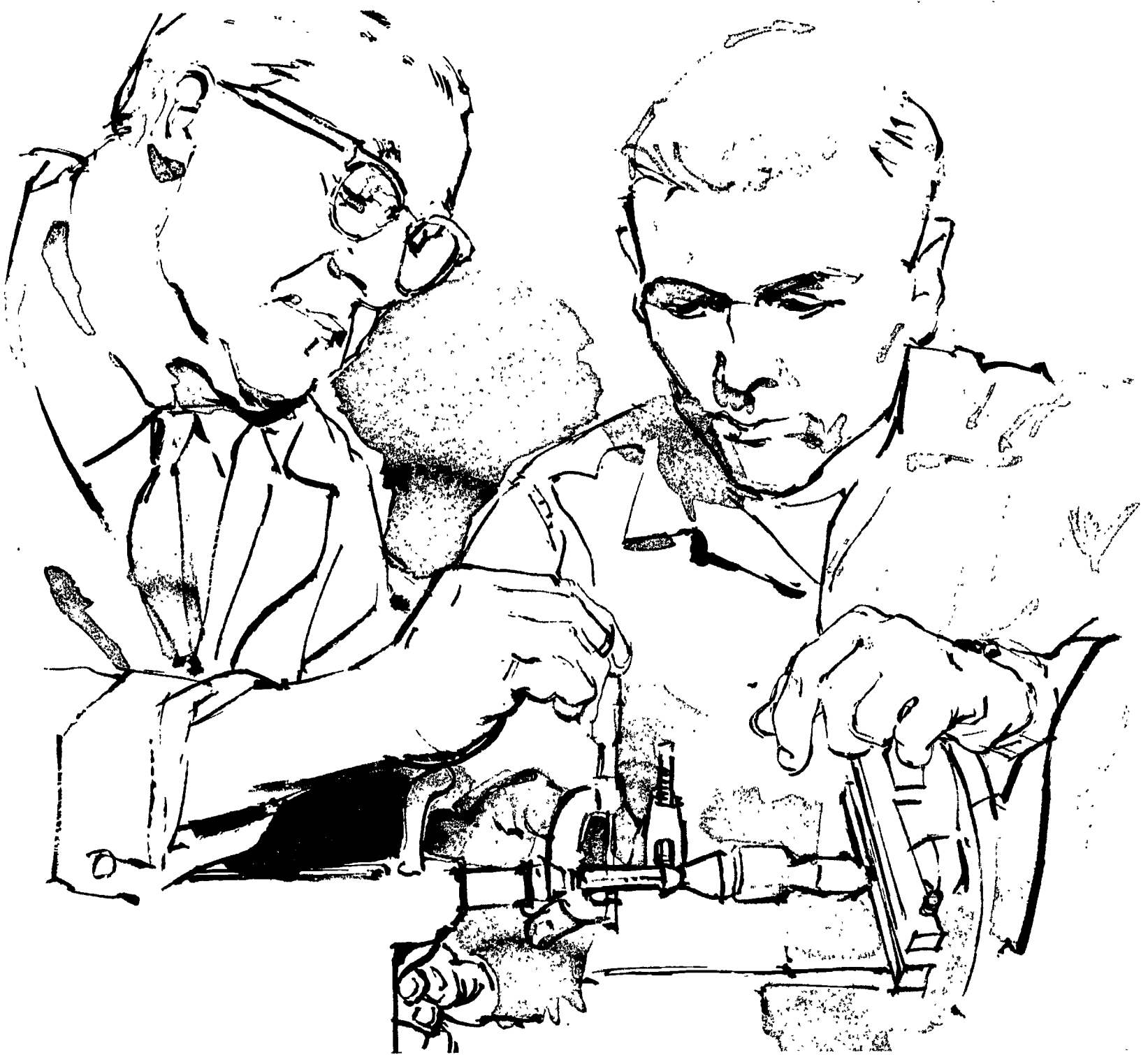
THE PURPOSE OF THIS BOOKLET IS TO PROVIDE GUIDELINES FOR
ESTABLISHING APPRENTICE PROGRAMS IN ANY INDUSTRY OR
OCCUPATION WHICH REQUIRES SKILLS THAT TAKE MORE THAN A FEW
MONTHS TO LEARN. TO ESTABLISH A PROGRAM IN A COMPANY WITHOUT
A LABOR AGREEMENT, THE PERSONNEL SHOULD (1) ORGANIZE AN
APPRENTICESHIP ADVISORY COMMITTEE, (2) DETERMINE ALL
KNOWLEDGE AND SKILLS NEEDED FOR THE OCCUPATION, (3) SECURE
THE COOPERATION OF WORKERS AND FOREMEN WHO WILL BE PROVIDING
THE ON-THE-JOB SUPERVISION, (4) ARRANGE FOR THE NECESSARY
RELATED CLASSROOM INSTRUCTION, (5) APPOINT AN APPRENTICESHIP
DIRECTOR TO MAINTAIN STANDARDS, AND (6) WRITE A SET OF
APPRENTICESHIP STANDARDS. BASIC STANDARDS HAVE BEEN
ESTABLISHED BY THE FEDERAL COMMITTEE ON APPRENTICESHIP. TO
CONFORM WITH THESE STANDARDS, A PROGRAM MUST PROVIDE FOR (1)
A MINIMUM AGE, (2) A FAIR OPPORTUNITY TO APPLY, (3) SELECTION
ON BASIC QUALIFICATIONS ONLY, (4) A SCHEDULE OF WORK
PROCESSES, (5) ORGANIZED RELATED TECHNICAL INSTRUCTION, (6) A
PROGRESSIVELY INCREASING WAGE, (7) PROPER ON-THE-JOB
SUPERVISION, (8) PERIODIC EVALUATION OF PROGRESS, (9)
APPROPRIATE RECORDS, (10) EMPLOYEE-EMPLOYER COOPERATION, (11)
RECOGNITION OF COMPLETIONS, AND (12) NONDISCRIMINATION IN ALL
PHASES. OTHER AREAS COVERED ARE BASIC PROVISIONS WHICH SHOULD
BE A PART OF THE PROGRAM, THE ACTUAL JOB INSTRUCTION, THE
COST OF APPRENTICESHIP, AND THINGS TO REMEMBER. ASSISTANCE IS
AVAILABLE FROM FEDERAL, STATE AND LOCAL AGENCIES FOR EACH
STEP OF PROGRAM PLANNING AND OPERATION. THE NAMES AND
ADDRESSES OF THE FEDERAL AND STATE AGENCIES, SAMPLE FORMS,
AND A LIST OF APPRENTICESHIP OCCUPATIONS ARE GIVEN IN THE
APPENDIX. (HC)



SETTING UP AN APPRENTICESHIP PROGRAM



U.S. DEPARTMENT OF LABOR
W. Willard Wirtz, Secretary
MANPOWER ADMINISTRATION
Bureau of Apprenticeship and Training



**U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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SETTING UP AN APPRENTICESHIP PROGRAM

**A Step-by-Step Guide
In Training Apprentices
For Skilled Occupations**



FOREWORD

With the demand for all kinds of skilled workers increasing more rapidly than the supply, the need for highly trained workers is becoming imperative.

The proven method of training highly skilled workers is through formalized on-the-job training called apprenticeship.

In the United States today, there are approximately 350 occupations, mostly in the construction, printing and metal-working trades, which are learned through apprenticeship.

The purpose of this booklet is to show how apprenticeship may be established in *any* industry and occupation requiring skills that take more than a few months to learn.

New demands on the abilities and experience of workers, who need wider training because of changing methods, materials, and technology, call for a new look into training methods.

Employers and labor organizations must examine their skilled worker needs to see how modern apprenticeship systems can help.

Long-range employee training is the key.

HUGH C. MURPHY
Administrator
Bureau of Apprenticeship
and Training

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APPRENTICESHIP

IS A METHOD OF TRAINING WORKERS . . .

- **ON THE JOB**
- **FOR A SPECIFIC LENGTH OF TIME**
- **AT PRE-DETERMINED RATES OF TRAINING PAY**
- **FOR A SPECIFIED RANGE OF SKILLS**
- **IN ONE PARTICULAR OCCUPATION**
- **WITH STATED HOURS OF CLASSROOM INSTRUCTION**
- **UNDER A WRITTEN AGREEMENT BETWEEN THE TRAINER AND THE TRAINEE**

THE TRAINER IS USUALLY

AN EMPLOYER who needs highly skilled workers in his plant or business.

THE TRAINER COULD BE A **LABOR ORGANIZATION** with an agreement with management to conduct the training under joint auspices.

The employer may be in any **INDUSTRY**:

- . . . manufacturing
- . . . building and construction
- . . . transportation
- . . . communications
- . . . wholesale and retail
- . . . services

AS LONG AS THERE IS A NEED FOR HIGHLY SKILLED WORKERS . . .

And the employer is willing to **INVEST** capital and time to obtain this type of worker as part of his regular cost of doing business.

THE TRAINEE, CALLED AN APPRENTICE, IS

An **EMPLOYEE** subject to the same rules and policies governing other employees in the firm or organization.

He is called an apprentice because he is —

Learning his skill on the job

In a wide range of skills

Over a period of at least 2 years

Under a written agreement with his employer

Going to job-related classes at a vocational school

He is usually selected as an apprentice on the basis of what will be required of him to be a skilled worker in a particular occupation.

This may mean that he should have —

. . . a high school education, or

. . . a knowledge of mathematics, or

. . . ability to use his hands, or

. . . special sense of eye or art, or

. . . good physical health, or

. . . superior intellect, or

. . . ALL OF THESE . . . OR SOME OF THESE.

IT DEPENDS ON THE DEMANDS OF THE SKILL HE MUST LEARN.

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A program may be set up for one apprentice or a thousand, depending on the need.



HOW IS AN APPRENTICESHIP PROGRAM STARTED?

There are two courses of action open to the employer based on whether his employees are organized or not.

IF THERE IS NO LABOR AGREEMENT

1. Organize an apprenticeship advisory group, made up of the production manager, one or more foremen, and one or more skilled workers.
2. Determine all the knowledge and skill needed for the occupation or occupations to be included in the program.
3. Secure the cooperation of the workers and foremen who will be expected to provide the apprentices with the direction and supervision on the job.
4. Have the advisory group visit the local vocational education director or school superintendent to arrange for necessary related classroom instruction.
5. Appoint an apprenticeship director to maintain the standards of training prescribed by the committee for the occupations involved, length of training, selection procedures, wages, tests, number to be trained, etc.
6. Basic details of this program should be written up as a set of apprenticeship standards.

Note: Company personnel or training directors could spearhead this program.

IF THERE IS A LABOR AGREEMENT

1. Discuss the proposed program with the appropriate union official if the training involves employees who would be covered under the collective bargaining agreement.
2. Set up a joint apprenticeship committee with the union to administer the program. The committee should have equal representation of labor and management, perhaps three from each.
3. The committee will arrange for necessary related classroom instruction with the local school system, usually through the vocational education school director.
4. The committee should agree on a set of standards for training, including occupations, length of training, selection procedures, wages, tests, number of apprentices.
5. Basic details should be written up and approved as the standards of the apprenticeship program.
6. If the union has no interest in the specific apprenticeship plan, the company should obtain a waiver from the union so that it can adopt the alternate course of action.

Note: The union may have a training coordinator or director who could do much of the preliminary work in helping to launch this program.

A list of State vocational education directors is included in the appendix.

PLENTY OF HELP IS AVAILABLE

In planning an apprenticeship program, plenty of help is available.

1. There are the general patterns for procedures and standards recommended by the Federal Committee on Apprenticeship, which is composed of outstanding representatives of employers and labor and education. It is the policy recommending body to the Secretary of Labor.
2. There are the general patterns for procedures and standards recommended by the State apprenticeship agencies (listed in the back of the book) which vary only slightly with the Federal standards.
3. There are published standards of apprenticeship in many occupations and industries which may be of invaluable assistance in helping to formulate plans in your field.
4. There are the specific experiences of many employers you may know who are involved in on-the-job pre-apprenticeship programs for the first time under provisions of the Manpower Development and Training Act of 1962.
5. There are field representatives of the Bureau of Apprenticeship and Training of the U.S. Department of Labor or of some of the State apprenticeship agencies who are ready and willing to give knowledgeable assistance in the development of apprenticeship programs.
6. There are vocational educators at the State, county and municipal level who may have invaluable advice to assist in arranging for necessary related instruction courses.

RECOMMENDED MINIMUM STANDARDS

Basic standards for a good apprenticeship program have been established by the Federal Committee on Apprenticeship.

To conform to these minimum standards, an apprenticeship program should contain provisions for the following:

- The starting age of an apprentice to be not less than 16.
- Full and fair opportunity to apply for apprenticeship.
- Selection of apprentices on the basis of qualifications alone.
- A schedule of work processes in which an apprentice is to receive training and experience on the job.
- Organized instruction designed to provide the apprentice with knowledge in technical subjects related to his trade (a minimum of 144 hours per year is normally considered necessary.)
- A progressively increasing schedule of wages.
- Proper supervision of on-the-job training with adequate facilities to train apprentices.
- Periodic evaluation of the apprentice's progress, both in job performance and related instruction.
- The maintenance of appropriate records.
- Employee-employer cooperation.
- Recognition for successful completions.
- Non-discrimination in all phases of apprenticeship employment and training.

SOME BASIC PROVISIONS WHICH SHOULD BE PART OF THE PROGRAM

Here is a guide to help list what should be part of the provisions in any apprenticeship program:

1. *Occupations*—Determine what occupation or types of jobs will be covered by the program. It could be an occupation or trade from the basic list (see appendix p. 24) or it could be a pioneering apprenticeship endeavor.
2. *Work Processes*—List the major on-the-job training process for each occupation separately. (See example p. 20). Will these processes develop the all-round skilled worker you need?
3. *Allocation of Work Training Time*—Determine the relative difficulty and importance of each work process and allocate the amount of training time, that is, the time the apprentice is expected to work on the particular process or machine to make him proficient. (One suggested formula for time allocation is given on p. 18).
4. *Term of Apprenticeship*—In most traditionally apprenticeable occupations the term of apprenticeship is well recognized. If you do not know what the term of apprenticeship should be, and you do not know of a standard practice for the occupation, list the work processes and set down opposite each process the amount of time it is agreed should be appropriate for each one. When everyone is satisfied about the time, total up the hours and convert into months and years. This should give you a fairly accurate idea of the time required.
5. *Trainee Qualifications*—What qualifications will applicants need to enter your program? These should be clear and objective, equal opportunity should be stressed. Is citizenship a requirement? Will they need a high school education? Or, more to the point, will they need to have studied certain subjects in high school to be able to take your

training? What about age limitations? Will there be a need to establish minimums and maximums? Any special physical, mental or health requirements because of the occupation involved? (You wouldn't want someone with a chronic skin disease training as a chef, or a prospect without a mathematics background as a sheetmetal mechanic.)

6. *Related Classroom Instruction*—As apprenticeship is most suited to jobs requiring broad skills and knowledge learned best on the job, apprentices will need classroom instruction related to the skill. The Federal Committee has recommended a minimum of 144 hours a year. This is predicated on two hours per night twice a week during a 36-week school year, usually provided by the local public vocational school without charge. It is suggested that the local vocational school coordinator be asked to assist. If there is no local vocational school in the community, contact the State director of vocational education at the State capital for assistance.
7. *Number of Apprentices*—The number of apprentices to be trained is usually determined by a ratio of apprentices to skilled workers (journeymen). Such a ratio is based on the facilities available for employing and training apprentices and on future employment opportunities. Since apprentices learn from the journeymen, the quality of training largely depends on the number of journeymen available to instruct the apprentices and the ability of the journeymen as instructors. It is seldom that a ratio of more than one apprentice to three journeymen is feasible or effective.
8. *Apprentice Wages*—A common method of expressing the apprentice wage or at least of arriving at it, is a percentage of the skilled worker's rate. There should be a progressively increasing schedule

of wages with increases at least every 6 months. The increases should be scheduled throughout the apprenticeship to provide both a monetary incentive and reward for steady progress on the job. During the last period of the apprenticeship, the apprentice should reach 85 to 90 percent of the rate paid a skilled worker in the occupation.

9. *Supervision of Apprentices*—Apprentices are customarily under the immediate instruction and supervision of the skilled worker to whom they have been assigned, and under general supervision of the appropriate foreman. In large apprenticeship programs an apprentice supervisor is designated or employed on a part or full-time basis and assigned the responsibility for carrying out the program. In small programs, this responsibility is basically that of the employer or his deputy.
10. *Apprenticeship Agreement*—Your program should provide for the signing of an agreement of apprenticeship between each apprentice and the proper officer of the establishment for registration purposes with the appropriate State or Federal apprenticeship agencies serving the area where the program is established. The agreement should contain: (a) Home address, and birthday of the apprentice; (b) name of the employer; (c) term of apprenticeship; (d) wage schedule; (e) length of probationary period; (f) an outline of the work processes schedule; (g) number of hours per year the apprentice agrees to attend classes, subjects, and name of the school; (h) any special provisions such as credit allowed for previous experience; (i) signatures of the employer and apprentice. If a union is involved, its approval is necessary; or if a joint apprenticeship committee exists, the agreement would be approved by such a committee. (See p. 26 for examples of apprenticeship agreements.)

THE ACTUAL JOB INSTRUCTION

The training program should be established on the basis of what the apprentice must do and what he must know in order to perform the operations of the job in a safe and satisfactory manner.

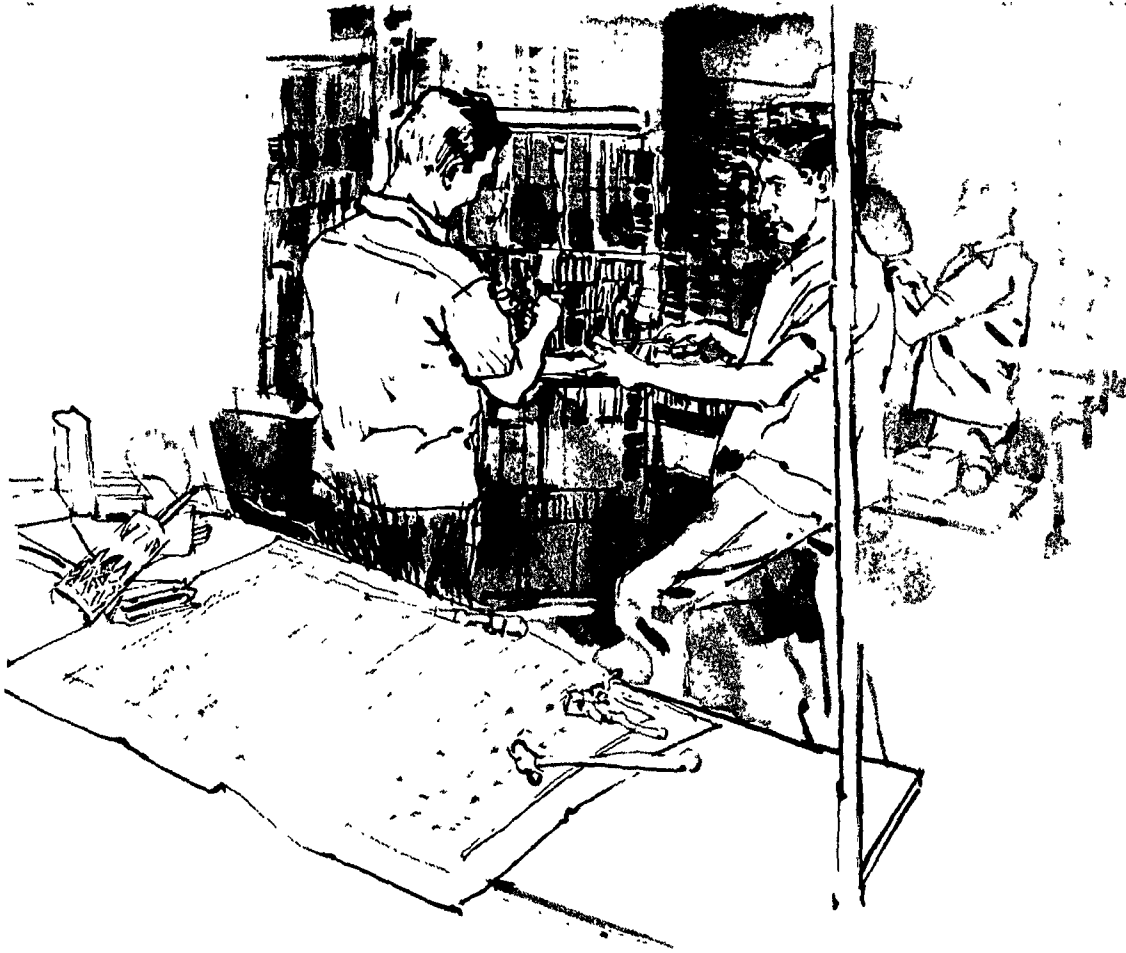
Selecting the skilled workers who will conduct the training and acquainting them with the job to be done is an important first step.

They should be thoroughly skilled in those phases of the occupation they are going to teach.

They should be definitely interested in the progress of apprentices on the job.

In teaching skills the job instructor will ordinarily proceed as follows:

1. He will question the apprentice as to what he knows about the operation or process.
2. He will demonstrate each operation by slowly performing each new process or step, emphasizing key points and safety precautions.
3. He will have the apprentice perform the operation, assisting him if he needs help.
4. He will have the apprentice repeat the work several times under observation until satisfied that he can do it alone, safely and well.
5. He will continue his supervision and encourage questions, to assure himself that the apprentice is carrying out the methods and processes he has been taught.



COST OF APPRENTICESHIP

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Because apprentices are paid wages while they learn and because, in larger business establishments, a supervisor of apprentices and one or more instructors may be employed, cost is considered by some potential sponsors as a governing factor in establishing a program.

It is difficult to apply the accountant's yardstick to apprenticeship. But, the Bureau of Apprenticeship and Training has enough circumstantial evidence to indicate that the work apprentices perform as they learn more than pays their way.

To find the break-even production time for apprentices:

If it takes 1 hour for a skilled worker to do a certain job of work . . . and

It takes 2 hours for the average beginning apprentice to do the same job of work . . . then

It is taking the apprentice twice as long to do the same work . . . or

The beginning apprentice is only 50 percent productive . . .

Therefore . . .

The beginning wage should be about 50 percent of the skilled worker's wage rate.

The training sponsor applies this rate to the first six months of work by the apprentice.

This same method of determining break-even production is applied for every six-month period.

If, in the second six months, the average apprentice is doing his work in 1 hour and 30 minutes compared to 1 hour for the skilled worker, then the wage rate should be 55 percent of the journeyman rate . . .

And, so on up the scale until the final period of apprenticeship when the wage rate should be about 90 or 95 percent.

IN OTHER WORDS, THE TRAINING SPONSOR IS ONLY PAYING WHAT THE APPRENTICE IS WORTH IN TERMS OF PRODUCTION OR SERVICES.

This method of determination of break-even production time could also be modified by the time lost by the skilled worker assigned to the apprentice for training purposes.

THINGS TO REMEMBER

A few important items should be kept in mind when planning an apprenticeship program.

1. *Equal Opportunity*—All application, testing and selection procedures must be conducted on the basis of equal opportunity without regard to race, color, creed, or national origin. So should advancements, transfers, wages, and discharges. This will ensure compliance with Federal and State laws and regulations which provide for nondiscrimination in apprenticeship and unemployment.

2. *Preemployment Tests*—Written and oral evaluations are usually made by the management, the union, or by the joint apprenticeship committee (if such is established). Aptitude testing is available through the local office of the State employment service if desired by the program sponsor. School records should be checked. The main purpose of the tests is to help screen out individuals who do not have the aptitude, solid interest, and other personal qualities necessary to succeed in the occupation.

3. *Apprenticeship Committees*—The decision as to whether there is to be a joint apprenticeship committee rests solely with the employer and the union. Its functions are decided in the same way. These might include: general supervision of the program, selection and enrollment of apprentices, arranging for their employment with the employer, if more than one employer is involved (in cases of apprenticeship programs sponsored through employer associations), keeping the employer and the union informed on the progress of apprentices, and checking and evaluating the performances of individual apprentices.

4. *Credit for Previous Experience*—Most programs should carry a provision on credit for experience in the occupation or trade related skills. It could be in this language: "The apprentice's experience in the occupation will be evaluated and appropriate credit will be allowed on the term of

apprenticeship for such experience. The apprentice allowed credit for previous experience will be advanced to the wage level appropriate to the amount of credit."

5. *Certificate of Completion*—A provision is customarily included stating that each apprentice shall be awarded, after he has satisfactorily completed his apprentice training, a Certificate of Completion of Apprenticeship. In connection with registered programs, such a certificate is available from the State apprenticeship agency or from the Bureau of Apprenticeship and Training, if a State agency is not established in your State.

6. *Registration of Programs*—Apprenticeship programs and apprenticeship agreements are registered with the State apprenticeship agency or the Bureau of Apprenticeship and Training if they meet their standards. Registration is entirely voluntary. By registration, however, a contribution is made to the national pool of information on apprenticeship programs and the number of apprentices in training. The Bureau maintains a current record of trends, statistics, and data on training—information of value to employer, labor and to industry as a whole.

7. *Minimum Wage Laws*—If your apprentices are subject to wage and hour provisions of the Fair Labor Standards Act, it will be necessary to start apprentice wage rates at least at the minimum statutory rate. Related supplemental classroom instruction does not include time spent by the apprentice in performing his regular duties. Thus, it will be necessary to determine beforehand in the written agreement whether (1) the apprentice will be paid for classroom attendance but the hours not considered hours of work, or (2) the apprentice will attend class without being paid or the hours counted, or (3) the apprentice will attend class as part of the regular workweek and will be paid his regular rate.

APPENDIX

HOW TO ALLOCATE WORK TIME

What will be the number of work hours for the apprentice during his term?
Will it be 8,000, 7,600, or 6,000 hours?

For an example of how to allocate worktime, let us assume that there are 12 different work processes or major operations. Some of these processes may require more training time than others.

On a blackboard or large sheet of paper list each of the work processes. Select the one in which the apprentice can become proficient in the shortest time and place the figure (1) next to it. Now compare each of the other processes to the one you have selected as taking the shortest time. Some you will decide to be twice as difficult, others three times as difficult, others to have about the same difficulty. As you decide on the relative difficulty of each, place a figure next to the process such as 2, 3, 4, or 1. These can be changed as you develop the allocations of time.

When you have finished, your board will look about like this:

Process A - 1	Process E - 2	Process I - 3
Process B - 2	Process F - 1	Process J - 1
Process C - 2	Process G - 3	Process K - 1
Process D - 4	Process H - 2	Process L - 3

Now carefully determine the number of hours it will take to train the apprentice in the shortest work processes, A, F, J or K. Let us assume you arrive at a figure of 320. Multiply 320 by the numbers you have given each of the processes. The example is now complete:

Process A - 320	Process E - 640	Process I - 960
Process B - 640	Process F - 320	Process J - 320
Process C - 640	Process G - 960	Process K - 320
Process D - 1280	Process H - 640	Process L - 940
		<u>8,000</u> hours

Your program of training, in this case, will take 8,000 hours or approximately four years since the maximum work hours in one year at 40 hours per week for 52 weeks is 2,080.

After the hours of work are distributed as indicated in the example it may be desired to add to some and reduce the amount of time for others.

EXAMPLE OF SCHEDULE OF WORK PROCESSES

Apprenticeship programs usually list all the various work processes and assign each process an approximate number of hours for learning. They also usually contain a statement either preceding or following the schedule which states something like the following:

“The order in which the work training experience is obtained need not necessarily follow the sequence of the schedule of work processes, but during the term of apprenticeship the apprentice will be given at least the minimum number of hours of experience scheduled for each process.”

The following schedule for an operating engineer apprentice learning how to be a heavy duty repairman is illustrative of a detailed schedule:

SCHEDULE OF WORK PROCESS HEAVY DUTY AUTOMOTIVE REPAIRMAN

	Approximate number of hours
1. <i>Cleaning and Inspecting the Parts of All Types of Equipment</i>	
2. <i>Cylinder Heads</i>	
(a) Checking and inspecting heads	
(b) Replacing valve guides	
(c) Removing and replacing valve seats	
(d) Reaming valve guides	
(e) Grinding valve seats with hard-seat grinder	
(f) Lapping valves	
(g) Checking valves with dial indicator	
(h) Installing injector tubes or brass	
(i) Replacing Welsh plugs and water test head	
(j) Rebushing rocker-arms and reaming bushings	
(k) Checking and replacing rocker-arm rollers	

Approximate
number of
hours

- (l) Torquing cylinder head bolts
- (m) Use of compounds on head gaskets
- (n) Torquing injectors and adjustments

3. *Cylinder Blocks and Liners*

- (a) Removing and installing cylinder sleeves
- (b) Cleaning and checking water passages
- (c) Checking counterbores for sleeves
- (d) Recutting and straightening counterbores
- (e) Removing and cutting cylinder
- (f)

1. Rebuilding and servicing of cylinders, valves and power control units

11. *Welding*

- (a) Acetylene—Cutting, brazing and welding
- (b) Electric—Cutting and welding

12. *Repair and Maintenance of Self-Propelled and Stationary Equipment Exclusive of Engines*

- (a) Use of proper oils, greases, tools and shop equipment
- (b) Maintenance and repair of the various types of equipment used by the industry

TOTAL HOURS—6,000.

If accumulated experience indicates that changes will be to the advantage of the employer and the apprentice, the above schedule may be changed. Full experience in all the principal trade processes shall be provided the apprentice in every case.

HOW TO
DETERMINE
CREDIT FOR
EXPERIENCE

Suggested form to be used in determining the amount of credit to be allowed for previous trade experience.

All the different processes of the trade should be set down in column (1). The number of work-experience hours should be set down in column (2).

	Filled in by JAC or employer ¹	Filled in by applicant			Filled in by JAC or employer
Trade: Machinist Term of Apprenticeship: 8,000 hours Detailed Trade Breakdown	Number of hours required for each process	Approximate hours spent in training for each operation	Approximate hours spent doing each operation on actual job assignment	Applicant's estimate of his competence on each operation (circle one) a—limited, b—moderate, c—broad	Preliminary estimate of remaining apprenticeship term
(1)	(2)	(3)	(4)	(5)	(6)
Drill press operations:					
Drilling-----				a b c	
Filing-----				a b c	
Polishing-----				a b c	
Counterboring-----				a b c	
Countersinking, etc-----				a b c	
Lathe operations:					
Facing-----				a b c	
Undercutting-----				a b c	
Drilling, etc-----				a b c	

¹ JAC means Joint Apprenticeship Committee.

CARPENTER APPRENTICE RECORDKEEPING REPORT

Name		Address					City				
Employer		Address					City				
Month	Year 19	Employer or foreman verify and sign above					Give job address above				
Total hours required	850	1,500	1,200	1,700	500	750	1,000	500			
Schedule	A Form building	B Rough fram- ing	C Out- side finish- ing	D Inside finish- ing	E Hard- ware fitting	F Lay- out	G Care of tools	H Mis- cel- lane- ous proc- esses	Hours of re- lated in- struc- tion	In- struc- tors verifi- cation	
Hours carried for- ward											
Date											
Monday											
Tuesday											
Wednesday											
Thursday											
Friday											
Saturday											
Sunday											
Monday											
Tuesday											
Wednesday											
Thursday											
Friday											
Saturday											
Sunday											
Total hours to date									↑ Total school hours above		

Remarks can be written on reverse side

Enter grand
total above ↑

SOME OCCUPATIONS WHICH ARE LEARNED THROUGH APPRENTICESHIP

The following occupations have training periods of from two to six years. Counting specialized jobs under the major trades listed below, there are approximately 350 in the United States which are being learned through periods of apprenticeship. (The numbers after the names indicate the years required).

Aircraft Fabricator (3-4)	Cook (3)
Airplane Mechanic (3-4)	Cosmetician (2)
Arborist (3)	Dairy Products Maker (2-3)
Asbestos Worker (4)	Draftsman-Designer (3-5)
Automotive Body Repairman (3-4)	Electrical Worker (4-5)
Automotive Mechanic (3-4)	Electroplater (3-4)
Baker (3)	Electrotyper (5-6)
Barber (2)	Engraver (4-5)
Blacksmith (4)	Fabric Cutter (3-4)
Boilermaker (4)	Farm-Equipment Mechanic (3-4)
Bookbinder (2-4)	Floor Coverer (3-4)
Brewer (2-3)	Foundryman (2-4)
Bricklayer (3)	Furrier (3-4)
Butcher-Meat Cutter (3)	Glazier-Glass Worker (2-4)
Cabinetmaker-Millman (2-4)	Heat Treater (4)
Candy Maker (3-4)	Iron Worker (2-4)
Canvas Worker (3)	Jeweler (2-4)
Carman (4)	Lather (2-4)
Carpenter (4)	Lead Burner (5)
Cement Mason (3)	Leather Worker (3-4)

Lithographer (4-5)
Machinist (4)
Mailer (4-5)
Maintenance Mechanic Repairman
(3-6)
Metal Polisher-and-Buffer (3-4)
Millwright (4)
Model Maker (4)
Musical-Instrument Mechanic (3-4)
Operating Engineer (3-4)
Optical Technician (4)
Orthopedic Prosthetic Technician
(3-4)
Painter-Decorator (2-3)
Patternmaker (5)
Photoengraver (5-6)
Photographer (3)
Plasterer (3-4)
Plate Printer (4)
Plumber-Pipefitter (4-5)
Printer (5-6)

Printing Pressman (4-5)
Rigger (2-4)
Roofer (2-3)
Rotogravure Engraver (5-6)
Sheet-Metal Worker (3-4)
Sign, Scene-and-Pictorial Artist
(3-4)
Silversmith (3-4)
Stationary Engineer (3-4)
Stereotyper (5-6)
Stone Worker (2-4)
Stonemason (3)
Tailor (4)
Telephone Worker (4)
Terrazzo Worker (3)
Textile Technician (2-4)
Tile Setter (3)
Tool-and-Die Maker (4-5)
Upholster (3-4)
Wallpaper Craftsman (4-5)
Wire Weaver (3-4)

SOCIAL SECURITY No.

APPRENTICESHIP AGREEMENT Between Apprentice and Employer

The employer and apprentice whose signatures appear below agree to these terms of apprenticeship:

The employer agrees to the nondiscriminatory selection and training of apprentices in accordance with the Equal Opportunity Standards stated in Section 30.3 of Title 29, Code of Federal Regulations, Part 30; and in accordance with the terms and conditions of the (Name of Apprenticeship Standards) which are made a part of this agreement.

The apprentice agrees to apply himself diligently and faithfully to learning the trade in accordance with this agreement.

Trade Term of apprenticeship (Hours or Years)

Probationary period Credit for previous experience

Term remaining Date the apprenticeship begins

This agreement may be terminated by mutual consent of the parties, citing cause(s), with notification to the Registration Agency.

(Signature of Apprentice)

(Name of Employer Company)

(Address)

(Address)

(Apprentice's Birth Date)

(Signature of Authorized Official)

(Parent or Guardian)

Approved by Joint Apprenticeship Committee.

Date by (Signature of Chairman or Secretary)

Registered by (Name of Registration Agency)

Date by (Signature of Authorized Official)

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Social Security No.

APPRENTICESHIP AGREEMENT
Between Apprentice and Joint Apprenticeship Committee

THIS AGREEMENT, entered into this day of 196....
between the parties to
(Name of local apprenticeship standards)
represented by the Joint Apprenticeship Committee, hereinafter referred to as the COMMITTEE, and
....., born hereinafter referred to as the
(Name of apprentice) (Month) (Day) (Year)
APPRENTICE, and (if a minor) hereinafter referred to as his
GUARDIAN. (Name of parent or guardian)

WITNESSETH THAT:

The Committee agrees to be responsible for the selection, placement and training of said apprentice
in the trade of as work is available, and in consid-
eration said apprentice agrees diligently and faithfully to perform the work of said trade during the
period of apprenticeship, in accordance with the regulations of the Committee. The apprenticeship
standards referred to herein are hereby incorporated in and made a part of this agreement.

Term of apprenticeship Probationary period
Credit for previous trade experience Term remaining
Other conditions

This agreement may be terminated by mutual consent of the signatory parties, upon proper
notification to the registration agency.

....., *Chairman*
(Signature of Apprentice) (Joint Apprenticeship Committee)
....., *Secretary*
(Address) (Joint Apprenticeship Committee)
.....
(Parent or guardian)

Registered by
(Name of registration agency)

Date By
(Signature and title of authorised official)

BAT 47 (Rev.)

FIELD OFFICES **BUREAU OF** **APPRENTICESHIP** **AND TRAINING**

Alabama

Birmingham 1931 9th Avenue S.
 Mobile Room 324 Federal Bldg.
 Montgomery 474 S. Court Street

Alaska

Anchorage Room 46, P.O. Building

Arizona

Phoenix 1330 N. First Street
 Tucson 130 S. Scott Avenue

Arkansas

Little Rock 700 W. Capital Avenue

California

Los Angeles 300 N. Los Angeles Street
 Oakland 354 21st Street
 Sacramento 2330 Auburn Boulevard
 San Diego 1927 Fifth Avenue
 San Francisco Room 10457, 450 Golden Gate Avenue

Colorado

Denver 730 17th Street
 Pueblo Room 206 P.O. Building

Connecticut

Bridgeport 83 Fairfield Avenue
 Hartford 983 Main Street
 New Haven 640 Chapel Street

District of

Columbia 1145 19th Street, N.W.

Delaware

Wilmington Rm. 321 Post Office Bldg.

Florida

Jacksonville 411 W. Adams Street
Miami 51 S.W. First Avenue
Orlando 2520 N. Orange Avenue
Tallahassee 1309 Thomasville Road
Tampa 500 Zack Street

Georgia

Atlanta 1371 Peachtree St., N.E.
Columbus 2210 Wynnton Road
Savannah Room 236 P.O. Building

Hawaii

Honolulu Room 351 Federal Bldg.

Idaho

Boise Room 435 P.O. Building
Pocatello 403 N. Main Street

Illinois

Chicago 413 Mannheim Road
(Bellwood)
Des Plaines 2510 Dempster Street
Lansing 18525 S. Torrence Ave.
Peoria Room 319 First National
Bank Building
Rockford 401 S. Main Street
Rock Island 211 19th Street
Springfield 600 E. Monroe Street
Wood River 15 E. Ferguson Avenue

Indiana

Evansville Room 310 Post Off. Bldg.
Fort Wayne Room 365 Federal Bldg.
Gary 610 Connecticut Street
Indianapolis 36 S. Pennsylvania St.
South Bend 224 W. Jefferson Blvd.

Iowa

Davenport Room 312 Federal Bldg.
Des Moines Room 201 Fed. Office Bldg.

Kansas

Topeka 320 W. 33rd Street
Wichita 114 S. Main Street

Kentucky

Lexington 121 Walnut Street
Louisville 139 S. Fourth Street

Louisiana

Baton Rouge 333 Laurel Street
New Orleans 701 Loyola Avenue
Shreveport 425 Milam Street

Maine

Augusta 4 Union Street
Bangor 61 Main Street
Portland 76 Pearl Street

Maryland

District of 1111 20th Street, N.W.
Columbia
(Suburban)
Baltimore 102 S. Gay Street
Hagerstown 3 S. Potomac Street

Massachusetts
 Boston 18 Oliver Street
 Lawrence 301 Essex Street
 Springfield 293 Bridge Street
 Worcester 500 Post Office Building

Michigan
 Battle Creek 74 N. Washington Avenue
 Detroit 234 State Street
 Grand Rapids 160 Ionia Avenue, N.W.
 Lansing 106 W. Allegan Street
 Marquette Room 232 Federal Bldg.
 Saginaw 105 N. Jefferson Avenue

Minnesota
 Duluth Room 204 Federal Bldg.
 Rochester Room 205 P.O. Building
 St. Paul 2147 University Avenue

Mississippi
 Gulfport 1319 24th Avenue
 Jackson Room 704 Milner Building

Missouri
 Kansas City 911 Walnut Street
 St. Louis 208 N. Broadway

Montana
 Butte Rm. 310 Fed. Office Bldg.
 Great Falls 510 First Avenue, North
 Helena Room 1 S. Annex Power Block

Nebraska
 Omaha 214 N. 17th Street

Nevada
 Las Vegas 2301 E. Sahara Avenue
 Reno 300 Booth Street

New Hampshire
 Manchester Room 208-A P.O. Bldg.

New Jersey
 New Brunswick 96 Bayard Street
 Newark Room 424 Federal Bldg.
 Trenton Room 405 Federal Bldg.

New Mexico
 Albuquerque 517 Gold Avenue, S.W.
 Roswell 413 N. Virginia Street

New York
 Albany Room 406-408 New P.O. Building
 Binghamton Room 314 P.O. Building
 Buffalo 69 Niagara Square
 Hempstead, L. I. 320 Fulton Avenue
 New York 45 Broadway
 Rochester Room 211 U.S. Post Office & Court House Building
 Syracuse 500 S. Salina Street

North Carolina
 Charlotte 316 E. Morehead Street
 Greensboro Room 433 P.O. Building
 Raleigh 1330 Saint Mary's Street
 Salisbury 132 No. Main Street

North Dakota
 Fargo 510 Fourth Avenue, No.

Ohio

Akron 72 S. High Street
Canton 1020 Market Avenue, No.
Cleveland 401 Euclid Avenue
Cincinnati Room 740 U.S. P.O. Bldg.
Columbus 22 E. Gay Street
Dayton 25 S. Main Street
Toledo 234 Summit Street
Youngstown 9 W. Front Street

Oklahoma

Oklahoma City Post Office Building
Third & No. Robinson
430 S. Boulder Street
Tulsa

Oregon

Eugene 835 Park East
Portland 520 S.W. Morrison Street

Pennsylvania

Allentown 133 N. Fifth Street
Altoona 1216-18 11th Avenue
Erie Room 316 Federal Bldg.
Harrisburg Room 1543 Labor & Indus-
try Bldg., 7th & For-
rester Streets

Philadelphia

Room 5014 U.S. Court
House Building
Pittsburgh Rm. 1102 New Fed. Bldg.
Reading Rm. 212 U.S. P.O. Bldg.
Scranton Rm. 303 U.S. P.O. Bldg.
Williamsport 734 West Fourth Street
York Rm. 221 Post Office Bldg.

Rhode Island

Providence E. Providence P.O. Bldg.

South Carolina

Charleston 334 Meeting Street
Columbia 901 Sumter Street
Spartanburg 273 S. Church Street

South Dakota

Sioux Falls 513 S. Main Avenue

Tennessee

Chattanooga 900 Georgia Avenue
Kingsport 320 W. Center Street
Knoxville 301 Cumberland Avenue
Memphis 167 N. Main Street
Nashville 801 Broad Street

Texas

Amarillo 804 Bryan Street
Austin 300 E. 8th Street
Beaumont 573 Pearl Street
Corpus Christi 205 N. Chaparral Street
Dallas 1416 Commerce Street
El Paso 218 N. Campbell Street
Houston 515 Rusk Street
Longview 222-24 E. Methrin Street
San Antonio 651 S. Main Street
Waco 800 Franklin Avenue
Fort Worth 100 N. University Drive

Utah

Salt Lake City 125 S. State Street

Vermont

Burlington P.O. Box 966, Fed. Bldg.

Virginia		Wisconsin	
Norfolk	101 East Main Street	LaCrosse	Room 214 P.O. Building
Richmond	400 N. Eighth Street	Madison	Room 585, 4802 Sheboygan Avenue
Washington			819 N. 6th Street
Seattle	506 Second Avenue	Milwaukee	Room 208 P.O. Building
Spokane	Room 208 P.O. Building	Oshkosh	429 Main Street
Tacoma	Room 412 P.O. Building	Racine	
West Virginia			
Charleston	Room 3011 Federal Bldg.	Wyoming	
Clarksburg	Room 211 P.O. Building	Casper	254 N. Center Street
Wheeling	Room 433 Federal Bldg.	Cheyenne	2120 Capital Avenue

REGIONAL OFFICES

Region I—(Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont)

Boston, Massachusetts (02203), J. F. Kennedy Federal Building

Region II—(New Jersey, New York, Puerto Rico, Virgin Islands)

New York City, New York (10001), 906 Parcel Post Building, 341 Ninth Avenue.

Region III—(Delaware, Maryland, North Carolina, Pennsylvania, Virginia, West Virginia)

Chambersburg, Pennsylvania (17201), Room 321 Professional Arts Building.

Region IV—(Alabama, Florida, Georgia, Mississippi, South Carolina, Tennessee)

Atlanta, Georgia (30309), Room 525, 1371 Peachtree Building, 17th and Peachtree Street, N.E.

Region V—(Kentucky, Michigan, Ohio)

Cleveland, Ohio (44114), 948 Engineers Building, 1365 Ontario Street.

Region VI—(Illinois, Indiana, Minnesota, Wisconsin)

Chicago, Illinois (60604), 219 S. Dearborn Street.

Region VII—(Iowa, Kansas, Missouri, Nebraska, N. Dakota, S. Dakota)

Kansas City, Missouri (64106), 2811 Federal Office Building, 911 Walnut Street.

Region VIII—(Arkansas, Louisiana, New Mexico, Oklahoma, Texas)

Dallas, Texas (75201), 411 N. Akard Street.

Region IX—(Colorado, Montana, Utah, Wyoming)

Denver, Colorado (80202), Room 832 Equitable Bldg., 730 17th Street.

Region X—(Arizona, California, Nevada, Hawaii)

San Francisco, California (94102), Room 10451, 450 Golden Gate Ave., P. O. Box 36017.

Region XI—(Oregon, Washington, Alaska, Idaho)

Seattle, Washington (98104), 1809 Smith Tower, 506 Second Avenue.

**STATE
APPRENTICESHIP
AGENCIES**
(Including the
District of Columbia,
Puerto Rico,
and the Virgin Islands)

Arizona Apprenticeship Council,
1623-B West Adams,
Phoenix, Ariz. 85007

Division of Apprenticeship
Standards,
Department of Industrial Relations,
San Francisco, Calif. 94102

Colorado Apprenticeship Council,
c/o Industrial Commission,
Denver, Colo. 80203

Apprentice Training Division,
Labor Department,
Wethersfield, Conn. 06109

Delaware State Apprenticeship and
Training Council,
Department of Labor and Industry,
Wilmington, Del. 19801

District of Columbia Apprentice-
ship Council,
1145 19th Street, N.W.
Washington, D.C. 20036

Department of Apprenticeship,
Florida Industrial Commission,
Tallahassee, Fla. 32304

Apprenticeship Division,
Department of Labor and
Industrial Relations,
Honolulu, Hawaii 96813

Kansas Apprenticeship Council,
Department of Labor,
Topeka, Kans. 66603*

Kentucky State Apprenticeship
Council,
Department of Labor,
Frankfort, Ky. 40601

Division of Apprenticeship,
Department of Labor,
Baton Rouge, La. 70804

Maine Apprenticeship Council,
Department of Labor and Industry
State Office Bldg.,
Augusta, Maine 04330

Maryland Apprenticeship and Train-
ing Council,
Department of Labor and Industry,
Baltimore, Md. 21201

Division of Apprentice Training,
Department of Labor and Industries,
Boston, Mass. 02202

Division of Voluntary Apprenticeship,
Department of Labor and Industry,
St. Paul, Minn. 55101

Montana Apprenticeship Council,
Department of Labor and Industry,
Helena, Mont. 59601

Nevada Apprenticeship Council,
Department of Labor,
Carson City, Nev. 89701

New Hampshire Apprenticeship
Council,
Department of Labor,
Concord, N.H. 03301

New Mexico Apprenticeship
Council,
Labor and Industrial Commission,
Albuquerque, N. Mex. 87106

Bureau of Apprentice Training,
Department of Labor,
Albany, N.Y. 12226

Division of Apprenticeship
Training,
Department of Labor,
Raleigh, N.C. 27602

Ohio State Apprenticeship Council,
Department of Industrial Relations,
Columbus, Ohio 43215

Oregon Apprenticeship Council,
Bureau of Labor,
Portland, Oreg. 97201

Pennsylvania Apprenticeship and
Training Council,
Department of Labor and Industry,
Harrisburg, Pa. 17120

Apprenticeship Division,
Department of Labor,
San Juan, P.R. 00908

Rhode Island Apprenticeship Council,
Department of Labor,
Providence, R.I. 02903*

Utah Apprenticeship Council,
Industrial Commission
Salt Lake City, Utah 84111

Vermont Apprenticeship Council,
Department of Industrial Relations,
Montpelier, Vt. 05601

Division of Apprentice Training,
Department of Labor and Industry,
Richmond, Va. 23214

Washington Apprenticeship Council,
Department of Labor and Industries,
Olympia, Wash. 98501

Apprenticeship Division,
Wisconsin Industrial Commission,
Madison, Wis. 53203

Virgin Islands Apprenticeship Council,
Department of Agriculture and Labor,
Christiansted, St. Croix, V.I. 00820

* All agencies, with the exception of Kansas and Rhode Island, operate under apprenticeship and/or training laws enacted by the legislature. Agencies in Kansas and Rhode Island function under executive order of the governor.

EXECUTIVE OFFICERS AND STATE DIRECTORS OF VOCATIONAL EDUCATION

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Alaska.....	William T. Zahradnicek, Alaska Office Bldg., Juneau 99801	Earl R. Hepler, Alaska Office Bldg., Juneau 99801
Arizona.....	Sarah Folsom, 400 Arizona State Bldg., Phoenix 85007	J. R. Cullison, 400 Arizona State Bldg., Phoenix 85007
Arkansas.....	A. W. Ford, State Education Bldg., Little Rock 72201	J. Marion Adams, State Edu- cation Bldg., Little Rock 72201
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Colorado.....	M. G. Linson, 32 State Serv- ices Bldg., Denver 80203	M. G. Linson, Acting, 32 State Services Bldg., Den- ver 80203
Connecticut.....	William J. Sanders, Hartford 06115	Joseph F. Murphy, P.O. Box 2219, Hartford 06115
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Florida.....	Floyd T. Christian, Tallahassee 32304	Walter R. Williams, Jr., Capi- tol Bldg., Tallahassee 32304

NOTE: Unless otherwise indicated, Executive Officers and State Directors of Vocational Education should be addressed at the State Department of Education.

Georgia.....	Jack Nix, Atlanta 30334	George W. Mulling, State Office Bldg., Atlanta 30334
Guam.....	Ivan W. Lasher, Agana 96910	Ivan W. Lasher, Agana 96910
Hawaii.....	Lowell D. Jackson, P.O. Box 2360, Honolulu 96813	Albert J. Feirer, P.O. Box 2360, Honolulu 96813
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Iowa.....	Paul F. Johnston, State Office Bldg., Des Moines 50319	Windol L. Wyatt, State Office Bldg., Des Moines 50319
Kansas.....	Frank T. Jacobs, State Office Bldg., 11th Floor, Topeka 66612	Frank T. Jacobs, State Office Bldg., 11th Floor, Topeka 66612
Kentucky.....	Harry M. Sparks, Frankfort 40601	Everett P. Hilton, Frankfort 40601
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Maine.....	William T. Logan, Augusta 04301	John A. Snell, Augusta 04301
Maryland.....	James A. Sensenbaugh, 301 W. Preston Street, Baltimore 21201	James L. Reid, 301 W. Pres- ton St., Batimore 21201

Massachusetts.....	Owen B. Kiernan, 200 Newbury St., Boston 02116	Walter J. Markham, 200 Newbury St., Boston 02116
Michigan.....	Alexander J. Kloster, Acting, Lansing 48902	Robert M. Winger, P.O. Box 928, Lansing 48902
Minnesota.....	Duane J. Mattheis, Centennial Bldg., 658 Cedar St., St. Paul 55101	S. K. Wick, Centennial Bldg., 658 Cedar St., St. Paul 55101
Mississippi.....	J. M. Tubb, Jackson 39205	A. P. Fatherree, P.O. Box 771, Jackson 39205
Missouri.....	Hubert Wheeler, Jefferson City 65102	Beauford W. Robinson, Jefferson City 65102
Montana.....	Harriet Miller, Helena 59601	Thad Diebel, State Capitol, Helena 59601
Nebraska.....	Floyd A. Miller, State Capitol, Lincoln 68509	Cecil E. Stanley, State Capitol, Lincoln 68509
Nevada.....	Byron F. Statler, Carson City 89701	John W. Bunten, Carson City 89701
New Hampshire...	Paul E. Farnum, State House Annex, Concord 03302	Earl H. Little, State House Annex, Concord 03302
New Jersey.....	Frederick Raubinger, 175 West State St., Trenton 08625	Robert M. Worthington, 175 West State St., Trenton 08625
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New York.....	James E. Allen, Jr., Albany 12224	Joseph R. Strobel, Albany 12224
North Carolina....	Charles F. Carroll, Raleigh 27602	A. G. Bullard, Raleigh 27602
North Dakota.....	M. F. Peterson, Bismarck 58501	LeRoy Swenson, Bismarck 58501
Ohio.....	E. E. Holt, State Office Bldg., Columbus 43215	Byrl R. Shoemaker, State Office Bldg., 65 S. Front St., Columbus 43215
Oklahoma.....	J. B. Perky, 1515 West 6th Ave., Stillwater 74074	J. B. Perky, 1515 West 6th Ave., Stillwater 74074
Oregon.....	Leon P. Minear, 318 Public Service Bldg., Salem 97310	William C. Loomis, 306 Pub- lic Service Bldg., Salem 97310
Pennsylvania.....	J. R. Rackley, Box 911, Harrisburg 17126	John W. Struck, Box 911 Harrisburg 17126
Puerto Rico.....	Angel Quintero Alfaro, Hato Rey 00900	Fernando Roca, Acting Hato Rey 00900
Rhode Island.....	William P. Robinson, Jr., Roger Williams Bldg., Hayes St., Providence 02908	Thomas H. Sandham, Jr., Roger Williams Bldg., Hayes St., Providence 02908
South Carolina.....	Jesse T. Anderson, Columbia 29202	R. D. Anderson, Columbia 29202
South Dakota.....	M. F. Coddington, Pierre 57501	E. B. Oleson, Pierre 57501
Tennessee.....	J. Howard Warf, Cordell Hull Bldg., Nashville 37203	B. E. Childers, Cordell Hull Bldg., Nashville 37203

Texas.....	J. W. Edgar, Texas Education Agency, Austin 78711	M. A. Browning, Texas Education Agency, Austin 78711
Utah.....	Terrel H. Bell, Salt Lake City 84114	Mark Nichols, State Capitol Salt Lake City 84114
Vermont.....	Richard A. Gibboney, State Office Bldg., Montpelier 05601	Harold F. Graeme, State Office Bldg., Montpelier 05601
Virginia.....	Woodrow W. Wilkerson, Richmond 23216	George L. Sandvig, Richmond 23216
Virgin Islands.....	Jane E. Tuitt, Charlotte Amalie, St. Thomas 00801	Jane E. Tuitt, Charlotte Amalie, St. Thomas 00801
Washington.....	Louis Bruno, P.O. Box 500, Olympia 98501	Ernest Kramer, P.O. Box 250 Olympia 98501
West Virginia.....	Rex M. Smith, Charleston 25305	Fred W. Eberle, Charleston 25305
Wisconsin.....	C. L. Greiber, 720 State Office Bldg., 1 West Wilson Street, Madison 53702	C. L. Greiber, 720 State Office Bldg., 1 West Wilson St., Madison 53702
Wyoming.....	Cecil M. Shaw, Cheyenne 82001	George A. McCutchan, Cheyenne 82001